

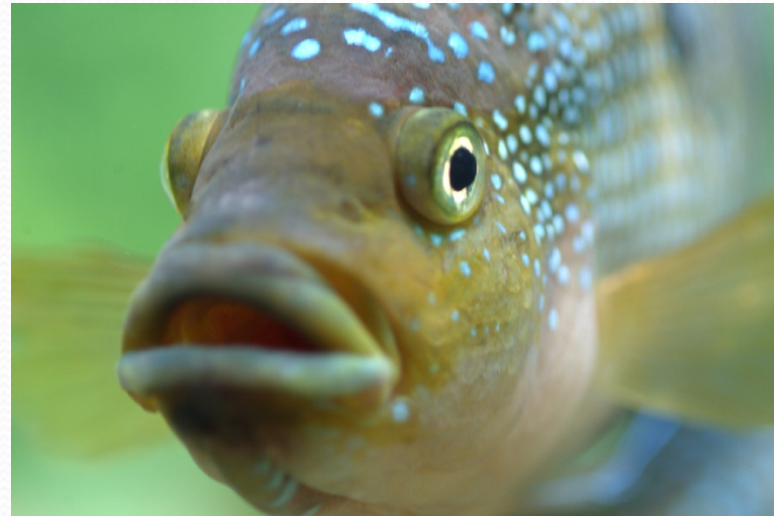
# CWA-FIFRA Common Effects Characterization Methodology

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# Outline

- Background
- EPA activities to date
- Next steps





# Background

- Both the Office of Pesticide Programs (OPP) and the Office of Water (OW) assess the effects of pesticides on aquatic ecosystems
  - High quality data
  - Peer-reviewed methodologies
- There are a few key differences
  - OPP assesses all pesticides; for OW pesticides are one of many contaminants that need water quality criteria
  - OPP assessment can be done with less data than is required by OW criteria derivation methodology



# Stakeholder concerns

- Need consistent and timely Federal input to help gauge whether pesticides represent a concern for aquatic life—criteria/benchmarks/reference values
- Want OPP and OW to have a consistent and common set of effects characterization methods.
- Want OPP and OW to use species of similar sensitivity, and/or to include uncertainties about sensitivity in characterizations of potential adverse effects.

# Freshwater Fish--Acute

	FIFRA (40 CFR Part 158); <b>pesticide registration</b>	CWA (40 CFR Part 136 & Methods); <b>no toxics in toxic amounts</b>
Preferred	<b>Rainbow trout</b> <b>Bluegill sunfish</b>	Most sensitive (in CA Basin Plans)
Others	Atlantic salmon <b>Brook trout</b> Channel catfish Coho salmon Common carp <b>Fathead minnow</b> Guppy Red killifish Threespine stickleback Zebrafish	<b>Fathead minnow</b> Bannerfin shiner <b>Rainbow trout</b> <b>Brook trout</b> <b>Bluegill sunfish</b>

# Freshwater Inverts--Acute

FIFRA (40 CFR Part 158)	CWA (40 CFR Part 136)
<i>Daphnia magna</i> <i>Daphnia pulex</i>	Most sensitive (in CA Basin Plans) among: <i>Ceriodaphnia dubia</i> <i>Daphnia pulex</i> <i>Daphnia magna</i> Stoneflies Crayfish Mayflies <i>Hyalella</i> spp. <i>Chironomus</i> spp.

# Freshwater Sediment--Acute

FIFRA (40 CFR Part 158)	EPA ORD Method
<i><b>Hyaella azteca</b></i> <i><b>Chironomus dilutus</b></i> <i><b>(formerly tentans)</b></i> <i>Chironomus riparius</i>	<i><b>Hyaella azteca</b></i> <i><b>Chironomus dilutus</b></i> <i><b>(formerly tentans)</b></i>



# What does this mean?

Example: bifenthrin water exposures

*Daphnia magna* = 1.4 ug/L

*Ceriodaphnia dubia* = 0.107 ug/L

*Hyalella azteca* = 0.0093 ug/L

LC<sub>50</sub> values (from ECOTOX database)

→NPDES permittees have to comply with CWA “no toxics in toxic amounts” using most sensitive species

# Scoping Document (April 2009)

- Goal: common basis for achieving water quality protection goals established under CWA and FIFRA
- Focus on data-limited situations
  - Insufficient data for Office of Water Criteria
  - Sufficient data for risk quotient approach used by Office of Pesticide Programs
- Potential uses of the common methodology
  - Derivation of benchmarks/criteria/reference values
  - Interpretation of monitoring data
  - Assessment of uncertainties in interspecies sensitivity

Note: Formal revisions to existing OW and OPP assessment methodologies are not being proposed as part of this process.

# Public Meetings

- Regional (Jan 2010)
  - Region 9 meeting in Oakland
  - Stakeholder input on initial thinking

-----White Papers drafted-----

- National (Dec 2010)
  - Washington, DC
  - Stakeholder input on draft white papers

# White Papers

- “Exploration of Methods for Characterizing Effects of Chemical Stressors to Aquatic Animals”
  - Explores approaches that rely on empirical toxicity test results to derive community level benchmarks for aquatic animals
- “Predicting the Toxicities of Chemicals to Aquatic Animal Species”
  - Overview of predictive methods that can generate surrogate values
- “Exploration of Methods for Characterizing Effects of Chemical Stressors to Aquatic Plants”
- Introduced new term: Aquatic Life Screening Value (ALSV)



# Current Status & Next Steps

- EPA working to analyze approaches and develop methodology
- SAP/SAB review
  - Tentatively scheduled for November/December 2011
  - Papers will be combined into one document
  - SAP/SAB will evaluate proposed methodology and assess approaches and tools

# Websites, Dockets

- Google: epa common effects methodology
  - <http://water.epa.gov/scitech/swguidance/waterquality/standards/criteria/aqlife/cem.cfm>
  - Best site
- Google: epa opp ow common effects methodology
  - [http://www.epa.gov/oppefed1/cwa\\_fifra\\_effects\\_methodology/](http://www.epa.gov/oppefed1/cwa_fifra_effects_methodology/)
- Docket for Regional Stakeholder meetings
  - EPA-HQ-OPP-2009-0773
- Docket for National Stakeholder meeting
  - EPA-HQ-OW-2010-0818

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